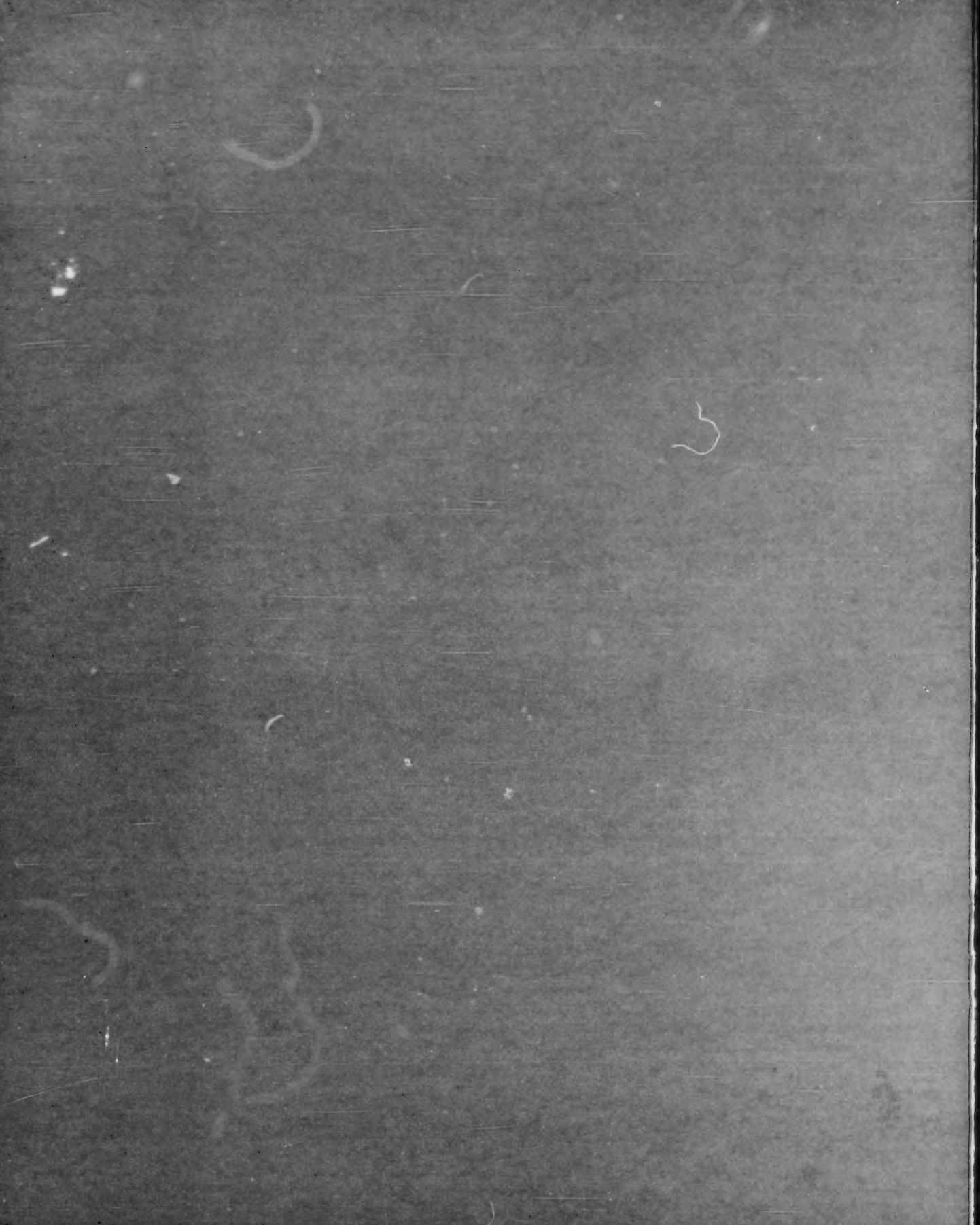




Just Clean Your Hands
Hand Care Program



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Hand Care Protection Components For Health Care Providers

A hand care protection program for health care providers is a key component of improving effective and safe hand hygiene practices to protect the health care provider and the patient from infections. A proactive program to protect the hands of the health care provider is necessary.

Related Documents:

PIDAC – Hand Hygiene Fact Sheet for Health Care Settings
Analysis Tool for Placement of Hand Hygiene Products

Overview:

Improved adherence to hand hygiene has been shown to terminate outbreaks, reduce the transmission of antimicrobial-resistant organisms and reduce overall infection rates.

Health care providers (HCPs) may wash hands up to 30 times per shift.¹ It is estimated that 25 per cent of nurses report symptoms or signs of dermatitis and as many as 86 per cent give a history of having skin problems. Frequent and repeated use of hand hygiene products, particularly soaps and other detergents, is a primary cause of chronic irritant contact dermatitis among health care providers.¹ Therefore, it is vital for the safety of the health care providers and patients to promote skin integrity through:

- Provision of effective hand hygiene products
- Providing teaching of the correct technique for hand hygiene
- Regular assessment of health care providers' hands

Components for an effective hand care program include:

1. Occupational Health assessment and support of program

- a) As part of the pre-placement health assessment, an assessment of the HCP's hands should be considered. (See Appendix A – Assessment Tool for Health Care Provider Hands.)
- b) For current HCPs, a process should be organized as part of one of the other Occupational Health programs (e.g., TB skin testing, Fit testing) to do the hand assessment at that time.
- c) As part of the assessment, verification that the HCP uses correct hand hygiene technique and is aware of how to protect skin integrity.
- d) At the first sign of any irritation, the HCP should be encouraged to have their hands assessed.

2. Product selection matters

- a) Provide a *60-90 per cent alcohol-based hand rub (ABHR)* at point of care as one of the primary products to be used for hands that are not visibly soiled. Many studies have shown ABHR is more effective and better tolerated than soap and water. ABHR significantly reduces the number of microorganisms on skin, are fast acting and cause less skin irritation. Select alcohol-based hand rub with emollients.¹
- b) Provide personnel with *efficacious hand hygiene products* that have low irritancy potential, particularly when these products are used multiple times per shift (1B).¹ This recommendation applies to products used for hand antisepsis before and after patient care in clinical areas and to products for surgical antisepsis by surgical personnel.¹
- c) To maximize acceptance of products by HCPs, *solicit input from the HCPs* regarding feel, fragrance and skin tolerance of any products under consideration. The cost of hand hygiene products should not be the primary factor influencing product selection (1B).¹
- d) *Solicit information from manufacturers* regarding any effects that hand lotions and creams or alcohol-based hand rubs may have on the persistent effects of antimicrobial soaps being used in the facility (1B).¹
- e) Provide HCPs with hand *moisturizing skin-care products* (and encourage regular frequent use) to minimize the occurrence of irritant contact dermatitis associated with hand antisepsis and hand washing (1A).¹

- Several controlled trials have demonstrated that regular use of lotions and creams (e.g., twice a day) can help prevent and treat irritant contact dermatitis caused by hand hygiene products. In one study, frequent and scheduled use of an oil-containing lotion improved skin condition and thus led to a 50 per cent increase in hand washing frequency among HCPs. It is important to educate personnel regarding the value of regular, frequent use of hand-care products. (1 page 272, 273)¹
 - Barrier creams are absorbed into the superficial layers of the epidermis and are designed to form a protective layer that is not removed by standard handwashing. In general, barrier creams are not effective and, in certain occupational settings, may be harmful as they actually trap agents beneath them, ultimately increasing risk of either irritant or contact dermatitis.²
 - The product selection committee must evaluate the efficacy and acceptability of hand-care products, and be aware of the potential damaging effects that oil-containing products may have on the integrity of gloves and the other antiseptic agents used in facility.
 - Moisturizing products are to be provided by the facility and not brought from home. (Products from home may not be dispensed safely, compatible with gloves or hand hygiene products.)
- f) When selecting non-antimicrobial soaps, antimicrobial soaps or alcohol-based hand rubs, solicit information from manufacturers regarding any known interactions between products used to clean hands, skin care products, and the types of gloves used in the facility (11).¹
- g) Do not add soap to a partially empty soap dispenser. This practice of “topping off” dispensers can lead to bacterial contamination of soap (1A).¹
- h) Select paper towels that are non-irritating.
- i) Select gloves that are non-irritating.
- Wear non-latex, non-powdered gloves where possible for all wet work. Powder free non-latex gloves appear to decrease irritation.

3. Educate health care providers frequently and in a variety of venues

Provide education to health care providers at orientation and on an ongoing basis about when and how to protect their hands in order to promote skin integrity. HCPs frequently think that nothing can be done for their irritated hands. A proactive message encouraging them to have an assessment, and education on how to protect their hands, will assist in early intervention to protect their hands.

- Verify HCPs are familiar with the correct hand hygiene techniques and have seen the Ministry of Health and Long-Term Care (MOHLTC) Hand Hygiene education module.
- Educate personnel regarding the need to use regular, frequent use of hand-care lotions provided by the facility.
- Educate personnel regarding wearing protective gloves correctly to decrease irritation from the gloves.
- Emphasize HCPs should have their hands assessed by Occupational Health as soon as any skin irritation occurs.

4. Technique matters

- a) Remove hand and arm jewellery when performing hand hygiene/surgical antisepsis. Jewellery is very hard to clean, and hides bacteria and viruses from the cleaning process. Eczema often starts under a ring finger as irritants may be trapped under the ring causing an irritation.
- b) To reduce skin dryness and irritation when washing:
- Use warm running water. *Avoid hot water* as repeated hot water may increase the risk of dermatitis (1B).¹ Hot water is an irritant.
 - Rinse thoroughly.
 - Pat hands dry with paper towel instead of rubbing them.
 - At work apply the provided moisturizer frequently.
 - If performing hand washing, do not follow by alcohol. Routinely washing hands with soap and water, followed immediately with alcohol-based hand rub, may lead to dermatitis.
 - Dry hands well before donning gloves.
- c) Surgical hand antisepsis/scrub
- Surgical hand antisepsis using either an antimicrobial soap or a *surgical alcohol-based hand rub* with persistent activity is recommended before donning sterile gloves when performing surgical procedures (1B).¹
 - When performing surgical hand antisepsis using an antimicrobial soap, scrub hands and forearms for the length of time recommended by the manufacturer, which is usually two to six minutes. Long scrub times are not needed (e.g., 10 minutes).¹
 - When using an alcohol-based surgical hand rub product with persistent activity, follow the manufacturer's instructions.
 - Before applying the alcohol-based surgical hand rub, pre-wash hands and forearms with a non-antimicrobial soap and then dry hands and forearms completely. After application of the alcohol-based product as recommended, allow hands and forearms to dry thoroughly before donning sterile gloves (1B).¹
- d) To reduce skin irritation when using alcohol-based hand rub:
- Remove hand and arm jewellery when performing hand hygiene. Jewellery is very hard to clean, and hides bacteria and viruses from the antiseptic action of the alcohol.
 - Ensure hands are visibly clean (if soiled, follow hand washing steps).
 - Apply between one to two full pumps of product, or squirt a loonie-sized amount onto one palm.
 - Spread product over all surfaces of hands, concentrating on fingertips, between fingers, back of hands, and base of thumbs. These are the most commonly missed areas.
 - **Rub hands until product is DRY. This will take a minimum of 15-20 seconds if sufficient product is used.**
 - Hands must be dry before donning gloves.
- e) To reduce skin irritation from gloves:
- Protective gloves should be used when necessary, but for as short a time as possible.
 - Protective gloves should be intact and clean and dry inside. Hands must be clean and dry when donning the gloves.

5. Protection of hands is a 24 hour/7day a week commitment

To protect hands from chemicals and extreme conditions at home and work:

- Continue hand protection for all cooking, cleaning, bathing and child care duties. Often products used at home can cause or aggravate a condition.
- Avoid chemicals on skin that may cause reactions such as glutaraldehyde, thiuram, and nickel found in jewellery.
- Take care when doing work at home to use protective gloves when indicated and use moisturizers frequently.
 - For example, when dishwashing, going outside in the winter or any time there is low relative humidity.

References:

1. Boyce JM, Pittet D; Healthcare Infection Control Practices Advisory Committee; HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. Guideline for Hand Hygiene in Health-Care Settings. Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. Society for Healthcare Epidemiology of America/Association for Professionals in Infection Control/Infectious Diseases Society of America. *MMWR Recomm Rep*. 2002;51(RR-16):1-45, quiz CE1-4. Available online at: <http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>.
2. World Alliance for Patient Safety. *WHO Guidelines on Hand Hygiene in Health Care (Advanced Draft)*. Geneva, Switzerland: World Health Organization; 2006. Available at: http://www.who.int/patientsafety/information_centre/Last_April_versionHH_Guidelines%5b3%5d.pdf.

Additional Resources:

- Agner T, Held E. Skin protection programmes. *Contact Dermatitis*. 2002;47(5):253-6.
- Graham M, Nixon R, Burrell LJ, Bolger C, Johnson PD, Grayson ML. Low rates of cutaneous adverse reactions to alcohol-based hand hygiene solution during prolonged use in a large teaching hospital. *Antimicrob Agents Chemother*. 2005;49(10):4404-5. Available online at: <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1251508&blobtype=pdf>.
 - One cutaneous adverse reaction per 72 years of exposure
- Kampf G, Ennen J. Regular use of a hand cream can attenuate skin dryness and roughness caused by frequent hand washing. *BMC Dermatol*. 2006;6:1. Available online at: <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1397860&blobtype=pdf>.
- Kampf G, Wigger-Alberti W, Wilhelm KP. Do atopsics tolerate alcohol-based hand rubs? A prospective, controlled, randomized double-blind clinical trial. *Acta Derm Venereol*. 2006;86(2):140-3.
 - This study looked at five alcohol-based hand rubs and their tolerance in atopsics and non-atopsics.
- Mygind K, Sell L, Flyvholm MA, Jepsen KF. High-fat petrolatum-based moisturizers and prevention of work-related skin problems in wet-work occupations. *Contact Dermatitis*. 2006;54(1):35-41.
- St Michael's Hospital. Resources: Occupational and Environmental Health. Available online at: <http://www.stmichaelshospital.com/programs/occupationalhealth/resources.php>.

Appendix A:

Assessment Tool for Health Care Provider Hands*

Assessment Tool for Health Care Provider* Hands

This form is intended for use to identify hand skin problems so that a proactive approach is used to protect hands from skin breakdown.

It is intended for use:

- a) At the initial assessment of hands of new health care providers
- b) For assessment of hands of employed health care providers (e.g., this can occur with TB skin testing, Bt testing or other mandated programs)
- c) For those who have developed skin problems

Name:		Date:	
Birthdate:	Telephone:	Job Title:	Employee Number:
Department:	Number of years in current position:		

Health care provider^a is to complete Sections 1, 2,^b 3, prior to Occupational Health assessment

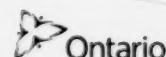
Section 1

Assessment	Yes	No
Do you have healthy hands with intact skin that are free of irritation at all times? <i>If answer is "no" please continue questionnaire. If answer is "yes" proceed to Section 2.</i>		
What climate conditions adversely affect your hands? <input type="checkbox"/> Dry <input type="checkbox"/> Humid <input type="checkbox"/> Cold <input type="checkbox"/> Hot		
Do you have a chronic or recurrent skin condition (e.g., eczema, psoriasis, bites)? <i>If yes, provide details.</i>		
Do you have a history of allergies? <i>If yes, please specify type, onset period and symptoms.</i>		
Are you asthmatic?		
List any medications being used (oral and topical - e.g., steroid cream):		



^a The Ministry of Health and Long-Term Care acknowledges St. Michael's Hospital and the provincial hand hygiene pilot hospitals for their active participation in developing this material and the WHO World Alliance for Patient Safety for sharing their "Clean Care is Safer Care" materials.

^b Any person who delivers care to a patient or works within the patient environment or is involved in food handling (examples but not all) include: physicians, nurses, respiratory therapists and other allied health care professionals, cleaning staff, food services staff.



* The Ministry of Health and Long-Term Care acknowledges St. Michael's Hospital and the provincial hand hygiene pilot hospitals for their active participation in developing this material and the WHO World Alliance for Patient Safety for sharing their "Clean Care is Safer Care" materials.

Section 1 (cont'd)

Assessment	Yes	No
Do procedures ever result in direct or indirect skin exposure (damage to outer barrier)? Examples:		
Contaminating or non-sterile gloves		
Removal of gloves from the patient		
Taking care of small children (e.g., perineal hygiene)		
Removal of gloves for non-sterile procedures (e.g., perineal hygiene)		
Handling contaminated or non-sterile devices		
Direct contact with patient's skin (e.g., perineal hygiene)		
Exposure to other infectious and potential irritants		
Have you a history of skin itching, redness, or soreness? (e.g., allergic reaction)		
Do you use a gel/foam-based hand sanitizer?		
<input type="checkbox"/> At least <input type="checkbox"/> Greater than 2 times a day <input type="checkbox"/> 1-2 times <input type="checkbox"/> 3-4 times <input type="checkbox"/> 5-6 times <input type="checkbox"/> 7-8 times <input type="checkbox"/> 9-10 times <input type="checkbox"/> At least <input type="checkbox"/> Greater than 2 times a day <input type="checkbox"/> 1-2 times <input type="checkbox"/> 3-4 times <input type="checkbox"/> 5-6 times <input type="checkbox"/> 7-8 times <input type="checkbox"/> 9-10 times		

Section 2

Evaluation of Frequency of Hand Hygiene Practices

Workday number of hand sanitizer per work

For how long have you been using alcohol-based hand rubs at work?

☐ For the first time ☐ Less than 1 year ☐ Between 1 and 2 years ☐ More than 2 years ☐ Not sure

Hand Cleaner (Please indicate all used)

	Number of times/day	Number of months used
Alcohol-based hand rub	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20	
Water and antiseptic hand soap	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20	
Water and liquid hand soap and antiseptic soap	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20	
Water only	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20	
Brush	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20	
Antiseptic hand sanitizer spray	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20	

How many times do you wash your hands during a working day?

☐ 0-5 ☐ 6-10 ☐ 11-20 ☐ Greater than 20

Do you ever use place training or skin protectant care for your skin? ☐ Yes ☐ No

Exposure Assessment

Gloves (please indicate which glove type you wear)

- | | | |
|--|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Latex | <input type="checkbox"/> Powdered | <input type="checkbox"/> Non-powdered |
| <input type="checkbox"/> Vinyl | <input type="checkbox"/> Powdered | <input type="checkbox"/> Non-powdered |
| <input type="checkbox"/> Nitrile | <input type="checkbox"/> Powdered | <input type="checkbox"/> Non-powdered |
| <input type="checkbox"/> Glove liners (polyurethane) | <input type="checkbox"/> Powdered | <input type="checkbox"/> Non-powdered |
| <input type="checkbox"/> Glove liners (nitrile) | | |
| <input type="checkbox"/> Other, please specify: | | |

Section 3

Evaluation of Skin Condition


Self-assessment of the skin on hands:

- | | |
|---------------------------------------|---|
| Appearance (scale 1-5, 1 being worst) | <input type="checkbox"/> Abnormal <input type="checkbox"/> Normal |
| Itchiness (scale 1-5, 1 being worst) | <input type="checkbox"/> Abnormal <input type="checkbox"/> Normal |
| Moisture content (scale 1-5) | <input type="checkbox"/> Abnormal <input type="checkbox"/> Normal |
| Sensation (scale 1-5, 1 being worst) | <input type="checkbox"/> Abnormal <input type="checkbox"/> Normal |

How would you assess the overall health of the skin on your hands? ☐ Very bad ☐ Good ☐ Perfect

Section 4

Complete Evaluation of Hand Condition for the Occupational Health Professional
 (Do not complete this section if the hand is injured)

Date:	
Initial:	
Employee:	
Job:	
Business:	
Address:	
Telephone:	
Hand(s) are used in the following ways:	
	

Section 5

Hand Washing Technique

Complete hand washing technique. See also Occupational Health Professional's Handbook.

<p>1. Wet hands with water.</p> <p>2. Apply soap to the palms of both hands.</p> <p>3. Rub hands together, covering all surfaces of the hands and fingers.</p> <p>4. Rinse hands thoroughly with water.</p> <p>5. Dry hands with a clean towel or paper towel.</p>
--

Visit the Ministry of Health's

Section 7

Outline Action Plan

1. List recommendations:

a) Work restrictions:

b) Hand care measures:

c) Work environment changes:

It is noted that if there is a work environment issue, it will be resolved.

Was notification done? www.nsih.on.ca

d) Other job:

Public opinion date: if indicated:

Section 6

Positive questions to be asked if there is any hand condition problem:

Assessment	Yes	No
Can you perform your job without any hand condition problem?		
Do you experience any pain or numbness in your hands?		
Do you experience any swelling in your hands?		
Do you experience any redness or irritation in your hands?		
Do you experience any dryness or cracking in your hands?		
Do you experience any itching in your hands?		
Do you experience any burning or stinging in your hands?		
Do you experience any blisters or sores in your hands?		
Do you experience any changes in the shape or size of your hands?		
Do you experience any changes in the color of your hands?		
Do you experience any changes in the texture of your hands?		
Do you experience any changes in the strength of your hands?		
Do you experience any changes in the flexibility of your hands?		
Do you experience any changes in the coordination of your hands?		
Do you experience any changes in the endurance of your hands?		
Do you experience any changes in the overall health of your hands?		

Appendix B:

Common Irritants to Skin Health (not all inclusive)

- Detergents (soaps) damage skin
- Hot water
- Wet work
- Low relative humidity
- Failure to use lotion/cream
- Not drying hands before donning gloves
- Powdered gloves
- Rubber and latex gloves
- Quality of paper towels
- Shear forces associated with removal of gloves
- Use of traditional surgical scrub brushes and surgical scrub times over recommended time
- Nickel sulfate (e.g., found in jewellery)

Appendix C:

Sample of General Hand Care Instructions

Maintaining intact skin on hands is important to protect you and the patient from infections.

Care for hands is a 24 hour/7 day a week consideration

1. At work, use alcohol-based hand rub (ABHR) for hand hygiene when hands are not visibly soiled. Many studies have shown ABHR is better tolerated than soap and water.
2. When washing hands use lukewarm water and unscented irritant-free soap or hand cleanser.
3. Remove rings when cleaning hands as cleaning product is caught under rings, which can cause dermatitis to flare.
4. Rinse hands thoroughly and pat hands dry.
5. Apply fragrance-free, non-irritating moisturizing cream dispensed in a bottle to hands frequently.
6. Avoid skin contact with detergents, strong cleaning agents, shampoos, various waxes and polishes, solvents and thinners.
7. Don't apply hair lotion, cream, gels or dyes with bare hands.
8. Continue hand protection for all cooking, cleaning, bathing and child care duties.
9. Protect your hands from the cold. Wear warm mitts or gloves at all times when in the cold. Even one minute of unprotected cold exposure may dry out hands. Be sure to wear gloves/mitts when handling a cold steering wheel.
10. Avoid irritants and allergens.

List other recommendations as indicated:

Adapted from *Contact Dermatitis Clinic General Hand Care Instructions*,
St. Michael's Hospital, Toronto Ontario.

Appendix D:

Grading of Centers for Disease Control Recommendations

October 25, 2002¹

Categories for strength of each recommendation

- A. Good evidence to support a recommendation for use.
- B. Moderate evidence to support recommendation for use.
- C. Insufficient evidence to support a recommendation for or against its use.
- D. Moderate evidence to support a recommendation against use.
- E. Good evidence to support a recommendation against use.

Categories for quality of evidence

- I. Evidence from at least one properly randomized controlled trial.
- II. Evidence from at least one well-designed clinical trial without randomization.
- III. Evidence from opinions of respected authorities on basis of clinical experience, descriptive studies or reports of expert committees.

For more information, please visit www.justcleanyourhands.ca